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Adults and Children

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CHAPTER 6

Posttraumatic Stress Disorder

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DESCRIPTION OF THE DISORDER

ALTHOUGH PSYCHOLOGISTS AND other mental health professionals have long appreciated the potential for life-threatening or other inordinately distressing life events to result in profound emotional and behavioral disturbances, inception of Posttraumatic Stress Disorder (PTSD) into the professional nomenclature is a fairly recent development. Prior to the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III;* American Psychiatric Association [APA], 1980), trauma-related sequelae were identified by a number of different labels corresponding to the specific traumatic event experienced (e.g., shell shock or combat fatigue, rape trauma syndrome; Foa & Meadows, 1997). It was only when researchers and clinicians began to note similarities in symptom course and treatment implications among these syndromes that they were classified together under the rubric of Posttraumatic Stress Disorder.

PTSD, an anxiety disorder, is necessarily secondary to particularly distressing events. Events that most frequently precipitate PTSD involve real or perceived life threat (such as combat, natural disasters, or violent crime), witnessing or experiencing significant accidents or injuries, or sexual assault. To meet *DSM-IV* diagnostic criteria, the individual must have experienced (or witnessed) such an event and exposure to this event must have elicited intense fear, helplessness, or horror (APA, 1994). The original criteria for PTSD held that for the diagnosis to be given, the person must have experienced a traumatic event that was "outside the realm of normal human experience" (APA, 1980). Subsequent epidemiological studies clearly demonstrated that experience of events known to elicit PTSD is far from atypical. For instance, a large-scale epidemiological study of a representative national sample of nearly 6,000 U.S. citizens estimated that approximately 61% of men and 51% of women have experienced at least one traumatic event at some point in their lives (Kessler,

Sonnega, Bromet, Hughes, & Nelson, 1995). Because incidence of traumatic events is unfortunately common, we no longer deem traumatic events to be outside the realm of normal human experience.

In addition to experiencing a traumatic event, diagnosis of PTSD also requires (1) at least one symptom of persistent reexperiencing of the event as evidenced by intrusive memories of the event, nightmares, flashbacks, or psychological or physiological reactivity to reminders of the trauma; (2) three or more symptoms of pervasive avoidance of stimuli or thoughts associated with the traumatic event, and/or emotional numbing; and (3) two or more persistent symptoms of increased arousal, such as hypervigilance, sleep difficulties, irritability, or exaggerated startle responses (APA; 1994). Moreover, these symptoms must persist for more than one month following the trauma and must be significantly debilitating so as to impair social, educational, or occupational functioning.

The rationale for the requirement that symptoms persist for more than a month rests on a finding that a majority of individuals who encounter a traumatic event will experience these symptoms in the immediate aftermath of the trauma. Accordingly, symptoms are not considered pathological shortly after the traumatic event, but instead are considered a normal reaction to inordinately distressing events. Although the one-month cutoff point is arguably arbitrary, there is accumulating evidence that individuals who are still markedly distressed one month after the traumatic event are significantly more likely to develop chronic symptoms of PTSD and are more likely to require treatment to ameliorate those symptoms (e.g., Brewin, Andrews, Rose, & Kirk, 1999).

Although exposure to events that can result in PTSD is not rare, the majority of individuals who experience such events do not ultimately develop chronic psychopathology. Lifetime estimates of PTSD following trauma depend on the nature of the traumatic event experienced, with some events resulting in higher incidence of PTSD than others. For instance, Breslau et al. (1998) estimated that approximately 49% of rape victims developed PTSD compared to 4% of natural disaster survivors. Lifetime prevalence of PTSD in the population at large is estimated at between 5% and 10%, making it one of the most common anxiety disorders (Ballenger et al., 2000).

PTSD can be very debilitating, and secondary clinical problems or difficulties are very common. Because of the persistent and sometimes extreme efforts to avoid cues, conversations, or places that serve as reminders of the traumatic events, individuals with PTSD often abuse substances and may withdraw from social situations, thereby increasing the likelihood of substance dependence disorders and secondary depression, among other complications (Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Kessler et al., 1995).

In addition to the overwhelming burden that this disorder places on the individual trauma victim, it also is associated with significant costs to society. As a point of fact, it can significantly impair occupational functioning (based on work days lost or reduced productivity), resulting in a conservatively estimated financial loss of over $3 billion in the United States (Ballenger et al., 2000). In sum, PTSD is unfortunately prevalent, is significantly debilitating to the individual trauma victim, is often accompanied by complicating secondary disorders or clinically significant problems, and exacts a substantial toll on the society as a whole. Fortunately, empirically validated treatments capable of greatly alleviating these difficulties have been developed, as illustrated in the following.

CASE DESCRIPTION

Mr. S. is a 34-year-old White male who was referred for assessment and treatment of symptoms secondary to being kidnapped and repeatedly physically assaulted during a cocaine purchase. At the time of his presentation for treatment, he had been married for five years and had a 4-year-old daughter. Initially, his marriage was very fulfilling, but his wife had an affair with one of his coworkers approximately two years into the marriage. Since that time, he and his wife have had somewhat frequent arguments and are more emotionally distant.

Mr. S. began using cocaine when he was approximately 31 years of age. He attributes onset of his cocaine usage to his wife's affair. He estimated that he used cocaine approximately two to three times per week until voluntarily seeking treatment approximately one year prior to the kidnapping and assault. He realized that his usage was interfering with his job performance, and he was concerned about his ability to parent while abusing cocaine. He also smoked marijuana regularly since the age of 18, but had not used any substances in the year preceding the assault, according to his report. He did relapse on the night he was kidnapped and assaulted, however.

According to Mr. S., he was particularly upset about an argument that he and his wife had earlier in the evening, so he left the home and went to the apartment of his former dealer to buy cocaine. After Mr. S. used some of the cocaine, the dealer pointed a pistol at him and robbed him. Not satisfied with the amount of money that Mr. S. was able to provide, the dealer forced him into a car and drove to several ATMs during the night, demanding that he withdraw more money from his accounts. The dealer was never satisfied, believing there to be more money in Mr. S.'s checking and savings accounts than he withdrew. The following morning, the dealer picked up two friends and they drove to Mr. S.'s wife's place of employment. They called her from their cellular phone and instructed her to meet them in the parking lot, where they demanded money and threatened to kill Mr. S. if she did not cooperate. She stated that she would try to call friends and relatives to get more money by the end of the day. In the meantime, the perpetrators drove Mr. S. to a secluded field, where they proceeded to beat him severely with their fists and tree limbs. They were alternately assaulting him and stopping to smoke marijuana. Mr. S. remembers hearing them laughing while beating him. At one point, he was forced into the trunk of the car for approximately 30 minutes while they continued to smoke marijuana. They called his wife and demanded that she meet them at a specified location with ransom money. At this point, they opened the trunk and beat Mr. S. while holding the phone to his head so that she could hear him scream.

They drove Mr. S. to the location where they were to meet his wife. She had not arrived yet, so one of the perpetrators stabbed Mr. S. in the stomach with a box cutter. Immediately after this, several policemen arrived and apprehended the perpetrators, as Mr. S.'s wife had notified the police of the situation and the meeting place. In addition to the stab wound, Mr. S. sustained numerous bruises and abrasions, as well as a concussion from being hit on the head with tree limbs. He was taken to the hospital, treated, monitored overnight, and discharged the next day.

CHIEF COMPLAINTS

Mr. S. presented for treatment approximately four weeks after this incident. He reported that he was experiencing frequent nightmares of the event, significantly

diminished sleep, overwhelming anxiety, and that he was constantly "on edge," fearing reprisal from the perpetrators. Although he knew that they were all in jail, he was concerned that they would be released on bail prior to their trial, or that their friends or family members would exact revenge against him for their imprisonment. He resumed working approximately one week after the assault, but reported that his concentration was significantly impaired and that he was unable to perform his job as well as he had previously. Although his supervisors were unaware of difficulties he was having, he stated that he was making numerous mistakes that his supervisors would eventually notice. In addition to the recurrent nightmares, he reported that he had vivid memories of the assault repeatedly throughout the day, and that these memories were accompanied by intense anxiety and strong physiological arousal, including an accelerated heart rate and rapid breathing. Although he went to great lengths to suppress such thoughts and to avoid all reminders of the trauma, he could not prevent the frequent, distressing memories of the event.

In addition to pronounced symptoms of PTSD, Mr. S. reported experiencing a very depressed mood. He attributed this depression to feelings of guilt about his relapse and about not being an adequate father to his daughter. Moreover, his wife was generally unsupportive as she continued to assert that the abduction and assault would have never happened had he remained clean and sober. Although he denied any previous history of alcohol abuse or dependence, he reported that he had been drinking two to three beers per night since the assault in an effort to relieve his anxiety and to facilitate falling asleep. Finally, he stated that he had been experiencing frequent headaches since the assault.

HISTORY

PTSD differs from other disorders by virtue of the fact that it develops in response to an objective, readily identifiable event (i.e., the traumatic event). Clearly, occurrence of a traumatic experience is a necessary precondition that must be met for the diagnosis to be given. In one sense, then, we could discuss the history of Mr. S.'s disorder only in terms of the traumatic event and the development of symptoms in response to that event. Although a trauma is necessary for PTSD to occur, it is certainly not sufficient, as evidenced by the fact that the majority of people who experience a traumatic event do not develop chronic psychopathology.

Accordingly, to fully consider the history of the disorder, attention must be paid to preexisting factors that have been identified as sources of vulnerability to developing PTSD following trauma. Notably, prior exposure to trauma, personal history of psychiatric disorder, and family history of psychiatric disorder all predict chronic PTSD following traumatic exposure (Marshall, Spitzer, & Liebowitz, 1999). Mr. S. reported that his childhood was quite difficult, as his father was an alcoholic and often abused his mother. In addition to witnessing violence in his home, he also witnessed a great deal of violence in his neighborhood and school. His parents divorced when he was 9 years of age. Despite these difficulties, he described his childhood relationships with peers as quite good and noted that he performed well academically. He ultimately earned a bachelor's degree in biology and obtained a position as a laboratory technician. From such minimal information pertaining to personal and family history, it is apparent that all of these factors might be relevant. Although he denied being physically abused by his

parents, he witnessed considerable violence both at home and at school. Some of these instances may have been severe enough to meet *DSM-IV* diagnostic criteria for a PTSD-eliciting traumatic event. He denied currently experiencing significant distress related to those events, but some have argued that the effects of trauma are cumulative, such that exposure to multiple traumas may exacerbate one's response to subsequent traumatic events (Dougall, Herberman, Delahanty, Inslicht, & Baum, 2000). With respect to family history of psychiatric disorder, at a minimum we know that his father abused alcohol. Finally, Mr. S. acknowledged a preexisting substance dependence problem of his own. Although none of these events may have contributed to his current PTSD, they were risk factors that should be considered.

In addition to previous stress events, peritraumatic and posttraumatic environment factors also can affect the likelihood of developing PTSD following trauma. With respect to his specific traumatic experience, kidnapping and prolonged assaults are associated with a very high incidence of subsequent PTSD diagnoses (Breslau et al., 1998). As for the posttrauma recovery environment, there is considerable evidence that social support in the aftermath of trauma is associated with positive posttraumatic adjustment (e.g., Taft, Stern, King, & King, 1999). Unfortunately, Mr. S.'s spouse was not very supportive following his trauma, which may have adversely impacted his symptom course and recovery. Enhancing his support system will likely be a very useful adjunct to trauma-focused therapy.

BEHAVIORAL ASSESSMENT

In 1988, researchers noted that despite the considerable need for measures of posttraumatic symptomatology, very few instruments with adequate psychometric properties were available (Keane, Caddell, & Taylor, 1988). However, since that time, trauma researchers and clinicians have witnessed a proliferation of structured interviews and self-report measures designed to assess exposure to potentially traumatic events (PTEs) and symptoms of PTSD. Although most of these measures are reasonably reliable and valid, they often are not directly compared with alternative, established measures. This has resulted in an array of duplicated measures that generally lack data demonstrating incremental utility or accuracy (Litz, Miller, Ruef, & McTeague, in press). Consequently, practitioners and investigators often have little basis for selecting a particular measure over others that are available. Excellent reviews of measures for PTSD are available (Litz et al., in press; Weathers & Keane, 1999). Here, we briefly describe a structured interview and a paper-and-pencil measure that are characterized by sound psychometric properties. These appear to offer great promise in overcoming the limitations of existing measures.

Perhaps the greatest advance in assessing PTSD is represented by the Clinician-Administered PTSD Scale (CAPS-1; Blake et al., 1990). The CAPS-1 items provide point-to-point correspondence with the 17 symptoms that constitute *DSM-IV* criteria for the disorder. Unlike other interviews for PTSD, frequency and intensity of symptoms are not conflated, as both dimensions are rated separately for each symptom on a 5-point Likert-type scale. The CAPS-1 provides standard prompt questions, suggested follow-up queries, and behaviorally specific anchors to facilitate clinician ratings. Importantly, it evaluates dichotomous diagnostic status (i.e., caseness) as well as continuous scaling of PTSD severity. Given the care that

went into its construction, it is not surprising that the CAPS-1 has excellent test-retest reliability, internal consistency, sensitivity, and specificity (Blake et al., 1995). The primary limitations of the CAPS-1 are that it does not elicit an exhaustive trauma history and that it requires an average of 45 minutes or more to administer. These limitations are shared by all other structured PTSD diagnostic interviews, however. Other promising structured interviews have been developed to assess PTSD, but more extensive validation efforts will be necessary to evaluate their utility relative to the CAPS-1.

Although structured clinical interviews may provide the most accurate diagnostic information (Norris & Riad, 1997), there are many purposes for which intensive interviews are not feasible. Paper-and-pencil measures of PTSD symptomatology are a much more efficient use of resources for many clinical purposes such as tracking symptom change over the course of treatment. A structured interview such as the CAPS-1 should be administered for formal diagnostic purposes, but paper-and-pencil PTSD symptom measures can be administered periodically thereafter to monitor therapeutic progress.

Although there are many psychometrically sound paper-and-pencil PTSD measures available, the only one that provides separate ratings of symptom frequency and intensity is the Modified PTSD Symptom Scale (MPSS; Falsetti, Resnick, Resick, & Kilpatrick, 1993). The MPSS can be scored dichotomously for informal diagnostic purposes, but can also be scored as a continuous measure. Frequency of each symptom is rated by respondents on a 4-point scale ranging from "not at all" to "almost always," and severity is rated on a 5-point scale from "not at all distressing" to "extremely distressing." It has demonstrated very good internal consistency and appears to be quite valid, as evidenced by its strong convergence with structured clinical interviews for PTSD (Falsetti et al., 1993). The MPSS is the self-report measure that is most analogous to the CAPS because it provides dichotomous and continuous scaling of PTSD severity and separate frequency and intensity ratings for symptoms.

Mr. S. clearly met diagnostic criteria for PTSD using the CAPS-1. Although the diagnosis only requires one reexperiencing symptom, three avoidance and numbing symptoms, and two hyperarousal symptoms, Mr. S. endorsed several symptoms in each category. The average symptom endorsed by him was experienced several times per week and was rated as being at moderately to severely distressing. The MPSS was administered every two weeks to evaluate therapeutic progress such that treatment could be revised if needed.

It is rarely the case that a trauma victim develops severe symptoms of PTSD without incurring other psychological symptoms or emotional difficulties. Thus, even if PTSD is strongly suspected or the most readily identifiable clinical problem, one should assess for other emotional or behavioral difficulties. Accordingly, Mr. S. also completed the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983), which is a relatively brief paper-and-pencil measure of wide-ranging psychological symptoms. Pronounced symptom scales on the SCL-90-R may indicate a need for further structured interviews or more in-depth assessment. His scores on scales assessing depression, anxiety, paranoid ideation, and somatic complaints were quite elevated. When later asked about somatic symptoms that he endorsed, he reported that his primary somatic complaints pertained to the aforementioned frequent headaches that he experienced following the assault. Finally, Mr. S. completed the Beck Depression Inventory-II (BDI-II; Beck, 1996). His responses were

indicative of a moderate-to-severe level of depression. Further interviewing confirmed that he met *DSM-IV* diagnostic criteria for a Major Depressive Episode. He denied experiencing any similar symptoms or prolonged periods of depressed mood prior to his kidnapping and assault.

MEDICAL CONSULTATION

Clearly, the most pressing physical complaints that required a referral to a physician for further evaluation and possible treatment were the frequent headaches he had been experiencing secondary to his physical assault. Although he received medical attention following his trauma, it should not simply be assumed that he was receiving follow-up medical care. Even if physicians who treated him strongly encouraged him to return for future appointments or to report any chronic pain or other difficulties following the assault, the sustained head injuries could conceivably have prevented consolidation or retrieval of this information. The concentration difficulties that he reported could simply be a symptom of PTSD that is not related to any structural damage or neurological deficit. But it is entirely possible that he could have sustained neurological damage as a result of the brutal assault. Not only is this important to evaluate and treat in its own right, but any cognitive deficits stemming from the trauma could have implications for psychotherapy. For instance, severe concentration deficits could interfere with his ability to engage in therapeutic exercises in session, and memory deficits could prevent him from engaging in therapeutic work between sessions.

In the case of Mr. S., subsequent neuropsychological testing revealed no significant cognitive functioning impairments that would adversely impact treatment. Moreover, neuroimaging techniques did not reveal any structural damage. His headaches were monitored by his physician and gradually remitted over time. The psychiatrist on staff also evaluated Mr. S. and prescribed an SSRI (selective serotonin reuptake inhibitor) to address his depressive symptoms, but SSRIs can also facilitate the treatment of PTSD (Friedman, Davidson, Mellman, & Southwick, 2000).

CASE CONCEPTUALIZATION

Diagnoses of PTSD are often overlooked because trauma victims may attempt to deal with or suppress trauma-related sequelae for months or years before presenting for treatment. In such instances, they may complain of general symptoms of anxiety and depression without referencing a specific traumatic event. Unfortunately, primary care physicians, as well as mental health professionals who are relatively unfamiliar with trauma, typically do not routinely screen for exposure to traumatic events. Clients who struggle with these difficulties for long periods of time may be so focused on describing their emotional experiences and symptoms when they finally do present for treatment that they may not mention that the symptoms ensued following some traumatic event. If the clinician does not explicitly ask about this possibility, the diagnosis of PTSD can easily be overlooked.

In Mr. S.'s case, the diagnosis was really quite simple because he sought treatment very soon after the traumatic event and noted that his emotional difficulties began immediately following his kidnapping and assault. Furthermore, he

denied experiencing any significant distress prior to the assault, reducing the likelihood that his difficulties may have been owing to an exacerbation of a preexisting condition. Not only did his early presentation simplify the diagnostic picture, it also likely facilitated the course of treatment because prognosis tends to be better for patients who seek treatment relatively soon after trauma (Shalev, Bonne, & Eth, 1996).

In any case, Mr. S. exceeded the minimal criteria for the diagnosis of PTSD. His harrowing experience would be considered traumatic by any reasonable diagnostician. Although the diagnosis requires only one reexperiencing symptom, Mr. S. reported several, including nightmares, intrusive and distressing memories of the assault during waking hours, and significant psychological and emotional reactivity to reminders of the event. Similarly, he clearly exhibited avoidance and emotional numbing symptoms that characterize the disorder. This is evident by the fact that he often would go to great lengths to avoid any cues or conversations that would remind him of his traumatic experience. To cite one of many examples, he stopped watching television altogether because of the numerous legal, medical, and law enforcement dramas that often depict violent crime or its aftermath. He also reported feeling detached from others and having a sense of a foreshortened future. Finally, with respect to the symptom category of increased arousal, he reported sleep difficulties, difficulty concentrating, hypervigilance, and an exaggerated startle response.

Although the three symptom categories (reexperiencing, avoidance/numbing, and hyperarousal) are presented and discussed in isolation, it is important to note that they are intimately interconnected. Etiological models of PTSD that have garnered the most empirical support have discussed the interplay between intrusive (i.e., reexperiencing) symptoms and avoidance symptoms in maintaining the disorder. Specifically, conditioning models (e.g., Keane, Zimering, & Caddell, 1985) hold that during an assault (or other type of traumatic event), intense fear is an unconditioned response to the traumatic event (the unconditioned stimulus). This emotional response (fear) is paired with stimuli that are present during the assault. Accordingly, a conditioned fear response is elicited by cues that have been paired with the traumatic event (i.e., conditioned stimuli), such that those stimuli are later capable of producing significant fear, anxiety, and distress when they are encountered following the trauma. A simple classical conditioning model cannot fully account for PTSD, however, because repeated experience with those cues or conditioned stimuli in the absence of actual trauma should result in extinction of the fear response.

This is precisely why the avoidance symptoms are relevant to the maintenance of the disorder. As applied to PTSD, Mowrer's (1960) two-factor model posits that this initial classical conditioning process is followed by operant conditioning (Keane et al., 1985; Shalev et al., 1996). Specifically, a trauma victim will subsequently avoid trauma-relevant cues or reminders, and this avoidance is negatively reinforcing in that it reduces aversive emotional states of fear and anxiety. Avoidance is immediately rewarded by a reduction in negative affect, but extinction of the classically conditioned fear and anxiety response never occurs because exposure to trauma cues (including thoughts and memories about the trauma) does not occur frequently enough or for a long enough duration. More recent etiological models of PTSD have retained a primary emphasis on these classical and operant conditioning processes, but have also incorporated cognitive factors such as

perceptions of predictability and control as being influential in the development and expression of posttraumatic psychopathology (e.g., Foa & Kozak, 1986).

In the case of Mr. S., he experienced extreme fear, helplessness, and anxiety during the attack. These emotional responses were easily elicited (i.e., a conditioned emotional response occurred) whenever he encountered internal or external cues that reminded him of the assault. Quite understandably, he attempted to avoid all thoughts, people, places, and conversations that reminded him of the trauma in an effort to prevent or minimize severe anxiety and distress that would inevitably follow. Unfortunately, trauma cues and memories are ubiquitous and, like virtually all trauma victims, Mr. S. was unable to avoid all such reminders. He continued to experience overwhelming distress secondary to his traumatic experience and, paradoxically, his extreme attempts to avoid trauma cues and keep this distress at bay only served to maintain the disorder. Accordingly, treatment necessarily involved intentional exposure to (objectively safe) trauma memories and cues (discussed in greater detail later in this chapter).

Given Mr. S.'s previous substance dependence problem, it was necessary to continually monitor his substance abuse. Significant abuse or dependence would likely interfere with therapy commitment and compliance and would need to be resolved first. Fortunately, Mr. S. did not resume cocaine abuse following his traumatic experience. Although he did not have a history of alcohol dependence, he was very forthright in acknowledging that he had been consuming more alcohol in an effort to address his sleep deficits. Although this is quite common for trauma victims with a history of substance abuse or dependence, it bears mentioning that even those without such a history have an increased incidence of substance abuse following trauma (Kilpatrick et al., 1998). Given the many ways that trauma victims attempt to avoid thoughts and feelings related to the trauma, it is not at all surprising that substances are often abused by victims in a futile attempt to cope with the aftermath of trauma.

Mr. S. also met *DSM-IV* diagnostic criteria for a Major Depressive Episode. Because these symptoms began immediately after his traumatic experience and because he did not have a history of mood disturbance, his depressive symptoms were viewed as secondary to trauma and a restricted lifestyle that is often attendant with PTSD. Major Depressive Disorder is the most prevalent comorbid disorder with PTSD (Kessler et al., 1995). Accordingly, trauma-focused therapy was recommended, as this typically results in an alleviation of both PTSD and depressive symptoms when, in fact, the depression is not a chronic pretraumatic condition. Obviously, the SSRI he was prescribed would also likely be helpful in alleviating his depressive symptoms.

Prior to beginning trauma-focused treatment, it is necessary to evaluate the recovery environment and factors that may hinder therapeutic progress. In particular, safety planning is of the utmost importance. It is inadvisable to expose trauma victims to thoughts, cues, and reminders of the traumatic event in an effort to extinguish the conditioned emotional response, if the individual is not objectively safe or is realistically concerned about a recurrence of the trauma.

Mr. S. endorsed significant symptoms of paranoid ideation on the SCL-90-R. Such pronounced suspiciousness can be delusional and is often indicative of a psychotic disorder. It should be acknowledged, however, that this type of concern is quite reasonable and not necessarily pathological given his very recent assault history. Upon further interviewing, he noted that he had never previously been suspicious of others, but that his primary concern regarding others' intentions was

possible retaliation by friends or family members of the perpetrators. Although his concerns are arguably not unfounded given the recency of his assault and the realistic possibility that friends of the perpetrators could seek to harm him, it is still necessary to allay these fears as much as possible before beginning therapy.

Finally, social support is associated with greater posttraumatic adjustment. Increasing victims' interaction with friends and family members is often an essential adjunct to treatment. More important, encouraging emotional disclosure to one or two very intimate and supportive friends or family members can be very helpful in promoting recovery.

RATIONALE FOR TREATMENT CHOICE

The rationale for exposure therapy derives logically from empirically validated etiological models of posttraumatic stress, described earlier. If in fact avoidance of thoughts, people, places, or other cues that remind victims of their traumatic experiences prevents extinction of the conditioned emotional response, it stands to reason that systematic exposure to such (objectively benign) cues will allow reduction of the fear response to occur. With repeated exposure to traumatic memories and trauma-relevant cues, their association to actual trauma and their capacity to elicit significant emotional and psychological distress are greatly attenuated.

Exposure therapy can be imaginal in nature or in vivo, although most treatment protocols use both procedures. In the former, trauma victims are asked to close their eyes and vividly imagine their traumatic event. They are asked to describe it aloud in the present tense, and to provide as much detail (sensory as well as attendant thoughts and feelings) as they can. This account is tape-recorded and the client is usually asked to listen to the tape at least once per day between sessions. This procedure is repeated in and across sessions until there is a significant reduction in anxiety and distress, as described below. During in vivo exposure, clients are asked to purposely expose themselves to activities, places, or other cues that are realistically safe and that they have been avoiding since the trauma. For instance, motor vehicle accident survivors who have been avoiding driving since their accident would be asked to begin going on short drives around their neighborhood. In vivo exposure is conducted only with stimuli that are objectively safe. Quite obviously, assault victims would not be encouraged to have contact the perpetrators.

Two comprehensive, critical reviews of psychosocial treatments for PTSD have concluded that cognitive-behavioral treatments generally, and exposure therapy specifically, have been the most rigorously tested and validated treatment methods for PTSD (Foa & Meadows, 1997; Rothbaum, Meadows, Resick, & Foy, 2000). The authors of both reviews identify multiple studies that converged to document the efficacy of exposure procedures in effectively reducing symptoms of PTSD. They commend exposure therapy as the "treatment of choice for PTSD" because of its demonstrated efficacy in varied trauma populations and its relative ease of implementation. Similarly, a recent meta-analysis of 61 treatment-outcome trials of psychological treatments for PTSD revealed that among treatments demonstrating positive therapeutic outcomes, exposure therapy was associated with the largest effect size from an independent evaluator (see Foa, 2000).

A common misconception about exposure therapy is that it only targets symptoms of anxiety and does not address other posttraumatic difficulties (e.g., depression), or that extinction of the fear response is its only benefit. Studies that

have included other outcome measures have consistently documented global and diverse treatment gains (Marks, Lovell, Noshirvani, Livanou, & Thrasher, 1998; Tarrier, Pilgrim, et al., 1999; Tarrier, Sommerfield, Pilgrim, & Humphreys, 1999).

As mentioned previously, recent etiological models of PTSD have implicated cognitive variables such as predictability and control as being important in the development of the disorder following trauma. Interestingly, treatments that have been developed to specifically target these cognitive variables, whether administered alone or in conjunction with traditional exposure methods, have not outperformed exposure therapy alone (Marks et al., 1998; Tarrier, Pilgrim, et al., 1999; Tarrier, Sommerfield, et al., 1999). It is arguably not the case that these cognitive factors are unimportant, but rather, that they can be modified by exposure as well as cognitive interventions (e.g., Socratic questioning) that are specifically designed to target them. Foa and Meadows (1997) assert:

> Exposure promotes symptom reduction by allowing patients to realize that contrary to their mistaken ideas: (a) being in objectively safe situations that remind one of the trauma is not dangerous; (b) remembering the trauma is not equivalent to experiencing it again; (c) anxiety does not remain indefinitely in the presence of feared situations or memories, but rather it decreases even without avoidance or escape; and (d) experiencing anxiety/PTSD symptoms does not lead to loss of control. (p. 462)

Over the course of exposure therapy, clients confront their fears that lead to avoidance, and consequently, maladaptive or erroneous cognitions that developed following trauma are disconfirmed. In short, exposure does not simply lead to reductions in aversive affective states. Reductions in conditioned fear and anxiety are accompanied by cognitive changes, including enhanced perceptions of control.

A final misconception about exposure therapy is that it is associated with greater therapy attrition rates or that it can exacerbate the disorder. Comprehensive reviews conclude that cognitive-behavioral treatments for PTSD (including exposure therapy) have lower dropout rates than pharmacological treatments (Foa, 2000), and the dropout rate for PTSD is not different than the rate for other anxiety disorders (Ballenger et al., 2000). Moreover, some studies (e.g., Foa, Dancu, Hembree, Jaycox, Meadows, & Street, 1999) show lower attrition in exposure conditions relative to other psychosocial interventions for PTSD.

It should be noted at the outset that any trauma-focused treatment is likely to produce immediate but transient symptom exacerbation in some patients. After all, most patients have expended considerable physical and cognitive resources trying to refrain from talking about or otherwise being reminded about their traumatic experiences. When they finally present for therapy to address symptoms secondary to trauma, they are being asked to do something (i.e., talk about their traumas) that they are strongly motivated not to do because avoidance is part and parcel of the disorder. It stands to reason, then, that beginning to talk about their trauma and the symptoms resulting from trauma will be accompanied by heightened anxiety as patients confront that which they would most like to avoid. But this is equally true for all interventions that seek to address trauma and its sequelae. Contrary to ubiquitous myths about exposure therapy, enduring adverse reactions are uncommon and are no more prevalent or severe than difficulties that arise in other treatments (Foy et al., 1996).

COURSE OF TREATMENT

As mentioned previously, it is of the utmost importance to ensure that the client's safety needs are met. Beginning exposure therapy while Mr. S. was still justifiably concerned about retaliation from the perpetrators' friends and family members could well have heightened his anxiety rather than alleviating it. Many states have passed victim advocacy legislation, including victim notification programs. Mr. S. registered for such a program that would notify him if and when any of the perpetrators were released from jail. He could also call a toll-free number to learn the status of their legal cases and incarceration. He purchased a home alarm system that allayed his concerns somewhat, although he was still worried about the possibility of a home invasion. This specific concern was relatively mild because it had been over a month since the perpetrators were imprisoned and he had not received any threats or harrassment. The alarm system and his enrollment in the victim notification program helped to alleviate his suspiciousness and fear of reprisal enough to allow us to proceed with trauma-focused therapy. He became increasingly confident that no reprisals would be forthcoming as his trauma became more distant. If his fear of a home invasion were more pronounced and persistent or if he had received threats, it may have been necessary for him to reside temporarily with friends or relatives.

In addition to safety planning, the first three sessions consisted of psychoeducation about PTSD and the role that avoidance plays in maintaining the disorder. During this time, Mr. S. was allowed to discuss the event at his own pace and at a level of detail with which he was comfortable. This process facilitates rapport and allows people to disconfirm fears they may have about discussing their traumas. During this initial phase of therapy, Mr. S. was also encouraged to use existing social supports. Unfortunately, his wife was so angry about his relapse that she was not able to be very supportive. We then took a twofold approach. First, Mr. S. had a very close relationship with his brother. He was encouraged to discuss with his brother difficulties he was having and to use this valuable source of support. Second, his wife was encouraged to come to one of his first sessions, during which she was allowed to express her frustrations and was educated about PTSD and the process of recovery as well as the importance of social support for trauma victims generally. Mr. and Mrs. S. were also given the contact information for a couple's therapist, who began working with them on issues of trust and communication. Mrs. S.'s anger about her husband's relapse waned over time, and although she was never as supportive as other figures in Mr. S.'s life during trauma-focused treatment, she was less critical of him and committed to continuing to work on their relationship.

The success of exposure therapy for PTSD hinges on the degree to which patients understand the role that avoidance plays in maintaining the disorder, as well as their understanding of the rationale for this approach. Clear presentation of the rationale, followed by evaluation of the patient's understanding of it, may be the single most important aspect of trauma-focused therapy for PTSD. This is because clients are being asked to engage in activities that they would very much like to avoid, and because transient symptom exacerbation can precede significant treatment gains. As such, their understanding of the rationale and course of exposure therapy may dictate their level of treatment compliance and adherence. Although attrition is not higher in exposure therapy than in other forms of treatment for PTSD, those who do not benefit from treatment (exposure or other

types of psychotherapy) rate therapy as less credible and miss more sessions than those who improve (i.e., they do not "buy into" the rationale; e.g., Tarrier, Pilgrim, et al., 1999). Thus, a client's understanding of the premise of exposure therapy coupled with regular attendance will allow him or her to benefit maximally from treatment. Moreover, informing patients that minor but transient symptom exacerbation often occurs can be very reassuring and can facilitate compliance and commitment to therapy in the event that initial increases in intrusive symptoms occur.

We advise therapists to ask patients to describe the rationale for exposure therapy in their own words prior to beginning exposure activities, to ensure that patients do not have misconceptions about the procedure or course of therapy. Mr. S. was able to articulate the reasons for imagining the assault and engaging in previously avoided activities despite the fact that this would be difficult. Like most victims' experiences, when he actually began to engage in these feared activities, he found them much more tolerable than he had anticipated.

EXPOSURE THERAPY (9 SESSIONS)

Most treatment-outcome studies of exposure therapy use the same frequency and duration of exposure sessions for all participants to render more readily interpretable experimental results. In practice, however, it is most advantageous to tailor both the duration and number of sessions to the needs of the particular individual. Because trauma victims present with widely varying traumatic experiences, symptom levels, recovery environments, and individual differences, a one-size-fits-all approach to treatment is ill-advised. Each session of exposure therapy should not end until the patient has experienced a significant reduction in anxiety (e.g., 50%), because stopping a session while the client is still experiencing maximal levels of anxiety can result in sensitization rather than extinction (Frueh, Turner, Beidel, & Mirabella, 1996). Moreover, exposure therapy cannot simply be doled out in weekly, 50-minute doses as therapy is traditionally practiced. Although criterion anxiety-reductions are achieved much more quickly in later sessions, initial therapy sessions can average approximately 90 minutes (Frueh et al., 1996) and occur more than once per week. If one of the primary benefits of exposure is that it disconfirms victims' fears about consequences of thinking about trauma and demonstrates that thinking about it is not nearly as bad as experiencing it, then discontinuing a session prior to a reduction in anxiety would be countertherapeutic.

In terms of number of sessions, this too depends on several factors, including the chronicity of the disorder, the severity of symptoms, and the degree of exposure the client is able to engage in between sessions. Generally, exposure therapy continues until a client can, at the beginning of a session, relay his or her traumatic event with fairly minimal distress. Most published investigations that have employed exposure techniques have ranged from 10 to 20 sessions (Rothbaum et al., 2000), although positive outcomes have been observed in as few as 4 sessions (Foa, Hearst-Ikeda, & Perry, 1995). Although Mr. S. had relatively severe PTSD symptoms, the recency of the trauma coupled with his diligence between sessions predicted a shorter course of therapy.

Imaginal exposure involves imagining the traumatic event as vividly as possible; in most cases, the entire event can be described in vivid detail because most

traumas are discrete events that rarely last more than several minutes. Because his trauma occurred over the course of a 24-hour period, it was first necessary to determine which specific aspect(s) of the kidnapping and assault were most distressing. From a practical standpoint, if the victim describes in detail a series of events that took place over the course of 24 hours, it will be difficult to repeat this process a number of times within a session to the point that anxiety reduction occurs. From a theoretical standpoint, focusing on the most distressing aspect of a traumatic event in exposure therapy will likely produce greatest change in the shortest time. Moreover, because avoidance is such an integral part of the disorder, clients may be inclined to imagine/describe less distressing aspects of the trauma in much greater detail than more distressing aspects, which would not be especially therapeutic.

If the clinician is not certain which aspects are genuinely most distressing, he or she will be unable to encourage more vivid, detailed accounts of those aspects. Accordingly, it is important to ask the victim to identify the particular memories that cause the most distress. Commonly, victims will not be able to provide this information when directly asked because they rightfully regard the entire event as a harrowing ordeal. Although this is certainly true, it is invariably the case that some aspects of a prolonged ordeal are more distressing than are others. If a client reports that he or she cannot discern the most distressing part of a prolonged trauma, this can be easily ascertained by having him or her vividly imagine and describe the entire series of events in as much detail as possible. At key points throughout this narrative, the therapist can stop the client and ask him or her to provide an anxiety rating on a 0 to 10 scale, with 0 representing absolutely no distress and 10 representing the most distress the person has ever experienced. In Mr. S.'s case, he had no difficulty nominating the most distressing aspects of his kidnapping and assault. Although the entire series of events was traumatic, the memories that caused him the most anxiety for several weeks after the trauma involved being locked in the trunk of a car and repeatedly beaten when the perpetrators drove him to the secluded area.

Mr. S. was asked to close his eyes and describe in vivid detail, aloud, and in present tense this portion of the kidnapping and assault. As he proceeded, the therapist interjected with prompts and queries about sights, sounds, smells, and so forth to ensure that he was creating as vivid an image as possible and not avoiding important aspects. He was asked to recall and describe his thoughts, feelings, and bodily sensations during the assault, all the while using the present tense (e.g., "I am walking down the hall" versus "I walked down the hall"). At the end of this narrative, he was asked to rate his distress on the 0 to 10 scale; this served as the baseline anxiety level for the session. This process of imaginal exposure followed by an anxiety rating was repeated until a 50% reduction in baseline had been achieved, at which point the session was terminated. During his first session of imaginal exposure, Mr. S.'s initial anxiety rating was 9. After 10 accounts of the event (which lasted for a total of 75 minutes), his anxiety rating was 4 and the session was terminated following a few minutes of progressive muscle relaxation. Each session was recorded, the tape was given to him at the end of the session, and he was asked to listen to it at least once per day before the next session.

When he returned the following week and described the event in detail, his initial anxiety rating was 7, and it required nine iterations for his anxiety rating to reduce to a rating of 3. Typically, over the course of exposure therapy sessions,

clients will report initial anxiety ratings that are somewhat lower than the initial rating given in the previous session, but higher than the rating they provided at the end of the last session. This treatment usually requires successively fewer exposure repetitions during each session to produce a 50% decrement in anxiety ratings. A benefit of this is that remaining time in session can be used to review compliance with imaginal in vivo exposure homework, to identify additional situations or trauma cues that the victim is avoiding, to plan in vivo exposure assignments accordingly, and to address obstacles that may interfere with these assignments.

By the ninth session, Mr. S. was able to imagine the assault in session without significant anxiety from the outset. Specifically, after his first imaginal exposure, he reported an anxiety rating of 2 and, unlike in earlier sessions, did not exhibit any visible signs of anxiety or distress. When victims can discuss their traumatic event without experiencing great distress, and when they can encounter unanticipated reminders of the event in the absence of significant distress, trauma-focused exposure therapy may be discontinued. It is important to note (and to inform clients explicitly) that treatment is not capable of eradicating all memories of the traumatic event, nor is it capable of rendering those memories neutral. After all, people who experience traumatic events but do not develop PTSD still have unpleasant thoughts and occasional memories about their traumas. The difference is that they are not incapacitated or overwhelmed with anxiety when these thoughts occur. The thoughts and memories of trauma after successful therapy are still unpleasant, but they are relatively infrequent and they are manageable.

THERAPIST-CLIENT FACTORS

Exposure therapy is widely regarded as the standard of care for PTSD (Rothbaum et al., 2000) because it is effective, but also because it is readily administered and requires relatively less training to be effectively implemented (Foa & Meadows, 1997; Marks et al., 1998; Tarrier & Humphreys, 2000). Because much of the "active ingredient" in exposure therapy is supplied by the client in the form of his or her ability to vividly imagine the trauma as well as his or her compliance with imaginal and in vivo exposure assignments, this treatment relies relatively less on the interplay between therapist and client.

It would be a mistake however, to assume that therapist-client factors are unimportant when conducting exposure therapy. As mentioned previously, successful outcomes depend almost fully on the extent to which the rationale for exposure therapy is effectively communicated to the client. Clear descriptions at the beginning of therapy of the process and typical course of exposure therapy, including difficulties that may be encountered along the way (e.g., temporary symptom exacerbation), can facilitate rapport, alleviate unnecessary anxiety about trauma-focused therapy, and enhance treatment compliance.

It is often mistakenly assumed that exposure therapy is "cold," unempathic, and mechanistic in its delivery. This is a misconception. In fact, therapists who would attempt to provide exposure therapy in such a fashion would soon find themselves without clients. Trauma-focused therapy, regardless of its form, is a most difficult undertaking for trauma victims and requires a safe, supportive environment. To the extent that the therapist is perceived by patients as caring and empathic, they will be more forthcoming in therapy and will be more apt to trust

the therapist enough to discuss their trauma. The very nature of PTSD motivates clients to refrain from discussing their trauma. Only a caring, supportive, emotionally responsive therapist will allow the client to risk discussing the trauma and to experience the emotional vulnerability that inevitably ensues. Only when the client feels safe and is willing to take this risk can exposure therapy begin.

COURSE OF TERMINATION AND FOLLOW-UP

Therapy does not simply end when the trauma victim is able to engage in imaginal exposure in the absence of significant distress. Although this marks the end of exposure therapy proper, it is necessary to meet with clients two or three more times to monitor symptoms and to again provide psychoeducation concerning urges that they may have to avoid thoughts or reminders of the trauma and the importance of resisting such urges.

After successful therapy, clients do not need to go out of their way to encounter trauma reminders. It will be important, however, for clients to refrain from making efforts to avoid reminders during the course of their normal activities. Victims should be informed that they might experience distressing traumatic memories or other intrusive symptoms from time to time, but that these are usually transient and manageable. In fact, they should allow these experiences to occur, as consistent efforts to prevent or avoid them can result in a worsening symptom course. In the event that the intrusive symptoms they experience in the future are enduring or pronounced, they should be encouraged to contact the clinician for "booster sessions," although this typically is not necessary.

If additional problems remain that are not specifically trauma-related, additional sessions or referrals to appropriate treatment providers will, of course, be necessary. For instance, following trauma-focused therapy, Mr. S. continued outpatient relapse-prevention therapy to target substance abuse behaviors, and he and his wife continued working on their marital relationship through couples therapy. Although many difficulties that do not fall under the rubric of PTSD will be alleviated with successful trauma-focused treatment, a thorough assessment of residual symptoms and difficulties will need to be conducted to ensure that the victim receives appropriate follow-up care when needed. This may consist of continued weekly therapy targeting these other problems (as in the case of Mr. S.), or it may simply consist of a single follow-up session a few weeks after termination to ensure that the patient is doing well and not in need of further treatment.

MANAGED CARE CONSIDERATIONS

Treatment for PTSD is generally reimbursed by most major insurance companies, Medicare, and Medicaid. Because exposure-based treatment techniques are brief and focused, insurance may pay for most or all of therapy. Because relatively few sessions are required for treatment gains to occur, any fees that the client will need to pay out-of-pocket will be kept to a minimum relative to other PTSD treatments. In some instances, insurance payments may not even be an issue for victims. This is because some states have victim compensation programs that pay for medical and psychological needs of crime victims. These programs are commendable, as victims are not further burdened with financial difficulties incurred as a result of seeking help.

OVERALL EFFECTIVENESS

Mr. S. demonstrated significant and meaningful improvement by any reasonable standard. Subjectively, he was able to recall and discuss his trauma and encounter reminders of it without experiencing the overwhelming anxiety with which he originally presented. Objectively, the moderate-to-severe symptom levels that he reported on assessment measures at the beginning of therapy declined to very mild levels by the last session. For instance, his total symptom score on the CAPS (Blake et al., 1990), which is derived by summing frequency and intensity ratings on all symptoms, decreased from 79 to 23. Although a score of 23 is well below his initial symptom level and well below the level endorsed by those with PTSD, it indicates that by the end of therapy, he was still experiencing some mild and relatively infrequent symptoms of PTSD. This is quite common among treatment responders or "successes" in that the majority will continue to experience mild symptoms (Ballenger et al., 2000). Patients and family members should be made aware of this fact from the outset.

In summation, exposure therapy is the most frequently studied and validated treatment for PTSD. Despite the fact that more complex etiological models have supplanted the simple conditioning models that gave rise to exposure therapy, novel treatments that incorporate other components (e.g., cognitive restructuring) have not outperformed exposure-based techniques in the treatment of PTSD. Short-term symptom exacerbation can occur when using exposure-based techniques, but this is no less true of other trauma-focused interventions. Contrary to clinical lore, complications that arise during the course of exposure therapy are no more common than when using other forms of treatment for PTSD. By contrast, ample empirical evidence supports the notion that exposure therapy is efficient, cost-effective, and readily implemented. Based on the preponderance of evidence attesting to its efficacy, we concur with others (Foa & Meadows, 1997; Rothbaum et al., 2000) in recommending exposure therapy as the intervention of choice when treating PTSD.

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